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MULTILEVEL BUILDING WITH SLOPED DRIVEWAY
MEHRSTÖCKIGES GEBÄUDE MIT GENEIGTEM FAHRWEG
IMMEUBLE MULTINIVEAU AYANT UNE VOIE D’ACCÈS INCLINÉE

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of US Utility Patent Application 13/545,975, filed on July 10, 2012.

FIELD OF THE INVENTION

[0002] This invention relates to dwelling structures, and more particularly to a novel stacked townhome design that is directly car-accessible.

DISCUSSION OF RELATED ART

[0003] Residential buildings such as single family homes, apartment buildings, townhomes, condominiums, and the like have undergone constant evolution over time as housing requirements for people in various locations and environments have changed. As such building have evolved, certain beneficial features have become popular, and even in some cases standard. [0004] For example, many housing tracts include a plurality of cul-de-sacs, which are popular because typically only residents drive such streets and excess traffic is minimized. As such, less vehicle noise is experienced by people living on such a street, and speeding is curtailed, leading to safer conditions. Further, residents of such streets often enjoy a closer neighborly bond, often being more observant of strangers and more easily being able to look out for each other’s property, and the like. [0005] As another example, condominiums and townhomes have become popular due to their reduced costs. However, one drawback of conventional condominiums, wherein each habitable unit is located on a single level, is that parking for the upper level units is necessarily located on the first level away from the condominium building, making such parking inconvenient. Most townhomes, on the other hand, since they utilize all levels of a building at a particular location, include a parking garage on their first level. However, such townhomes are accordingly not stacked, and thus the number of parking spaces in each unit, and therefore in the entire building, are limited in practice to two or three. Further, such an arrangement is limited by the available land, and as such is a low-density solution. [0006] The standard sloping floor parking garage typically contains two adjacent parking modules tilted in opposite directions with cross-aisles at each end so that vehicles traveling the length of both aisles make a 360 degree turn to move up or down one complete parking level (as detailed in Time-Saver Standards for Building Types / 3rd Edition by Joseph De Chiara and John Hancock Callender 3rd ed. p924, McGraw-Hill, 1990, ISBN 0-07-016279-4). This design has a sloped floor of 3 to 5 percent to permit comfortable parking and pedestrian walking. This design has been used exclusively for parking purpose with no known attempt to integrate multiple personal occupancy spaces in its system.

[0007] The most successful prior art design that address the issue of allowing direct access to residential units in a high-density development is presented by yavoshetskii Jgor Abramovich in RU 116883 U1 and Hugh W. Johnston in US Pat. No. 6,209,270. Their ascending method is by a helical ramp discrete from the main body of the structure, which requires considerable additional real estate and lengths travel time from the ground floor to each unit. Further, such discrete ramps have a difficult-to-camouflage parking garage appearance and give the impression that those living in such a structure live in a modified parking garage. Further, emergency and oversized vehicles often have difficulty with such one-lane ramp systems.

[0008] Other prior art designs provide differing solutions to providing parking closer to residential units, such as WO 01/31144A1, WO 2008/031183 A2 and the following:

<table>
<thead>
<tr>
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<th>Inventor</th>
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[0009] In each of these prior art designs, the resulting structure either does not provide for parking in a garage that is integral with or immediately adjacent to a residential unit, or presents the unsightly appearance of a modified parking garage.

[0010] Clearly, then, there is a need for a housing structure that combines the features and benefits of a cul-de-sac community, but that also benefits from the lowered costs associated with townhomes and condominiums in a high-density structure. Such a needed housing structure would provide for units on multiple levels, yet also provide for direct access parking in each habitable unit. The structure from outside would provide the appearance of a residential building or cluster of buildings. The present invention accomplishes these and other objectives.

SUMMARY OF THE INVENTION

[0011] The present device is a housing structure for erecting on a ground surface. The housing structure includes a generally helical ramp. The ramp preferably includes at least two marked or otherwise indicated lanes for accommodating vehicular traffic in opposing directions, a loop at the highest level of the ramp connecting the at least two lanes.

[0012] The ramp may further include a plurality of guest parking spaces and at least one elevator. At least one
The ramp includes a plurality of habitable units, each at one of a plurality of radial positions with respect to a center of the ramp. The habitable units that share any particular radial position but that are vertically offset are each generally vertically co-aligned in a common multi-level building. Such stacks of habitable units combined in a common multi-level building may include at least two laterally adjacent habitable units per level. In one embodiment, at least one habitable unit is a two-story habitable unit, or even a three-story habitable unit, particularly on the highest level of the ramp.

Each habitable unit preferably comprises at least a private garage and a private living space. The garage is connected to the ramp with a driveway. As such, each habitable unit may be accessed by vehicle directly, without the need to park at a lower level and take an elevator or stairs as with prior art apartment or condominium buildings, for example. Further, each habitable unit may include a balcony oriented away from the ramp, as well as a breezeway connected to a front porch between at least one laterally-adjacent habitable unit.

Preferably the lowest level of the ramp is coincident with the ground surface, and the highest level of the ramp terminates in the loop. The structure may include access control systems at the lowest level, as well as fire safety enclosures, devices and systems. A basement level may further be included for storage, additional or oversized parking, or the like. The structure may further include security systems, landscaping, lighting systems, communications systems, utility lines, sewage systems, and the like as necessary.

The present invention is a housing structure that combines the features and benefits of a cul-de-sac community, but that also benefits from the lowered costs associated with townhomes and condominiums in a high-density structure. The present structure provides for habitable units on multiple levels, yet also provide for direct access parking in each habitable unit. The structure from outside presents the appearance of a residential building or cluster of buildings, as opposed to that of a parking garage. Other features and advantages of the present invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the principles of the invention.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partial perspective cut-away view of the housing structure of the invention;
FIG. 2 is a top plan view of the invention, illustrating a typical level thereof;
FIG. 3 is a top plan view of a highest level of the invention;
FIG. 4 is a top plan view of a typical level of an alternate embodiment of the invention;
FIG. 5 is a cross-sectional view of the invention, taken generally alone lines 5-5 of FIG. 2;
FIG. 6 is a cross-sectional view of the invention, taken generally alone lines 6-6 of FIG. 2; and
FIG. 7 is a side elevational view of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Illustrative embodiments of the invention are described below. The following explanation provides specific details for a thorough understanding of and enabling description for these embodiments. One skilled in the art will understand that the invention may be practiced without such details. In other instances, well-known structures and functions have not been shown or described in detail to avoid unnecessarily obscuring the description of the embodiments.

FIGS. 1-3 illustrate a housing structure 10 for erecting on a ground surface 15. The housing structure 10 includes a generally helical ramp 20 that has an inner edge 22 and an outer edge 28. In a preferred embodiment the ramp 20 may include a plurality of straight sections 120 each interconnected with curved sections 130 (FIG. 1), providing open natural lighting to all levels, or in an alternate embodiment the ramp 20 may be a generally continuously curved (FIG. 4). The ramp 20 is generally sloped along its entire length at no more than 3 to 7%, allowing ease of walking and driving, although it may include areas sloped at different relative gradients as necessary. The ramp 20 is constructed of concrete or other suitably rigid, strong, and durable material or combination of materials.

The ramp 20 preferably includes at least two marked or otherwise indicated lanes 140 for accommodating vehicular traffic in opposing directions (FIGS. 1-3), a loop 100 at the highest level 90 of the ramp 20 connecting the at least two lanes 140. In one embodiment, the ramp 20 further includes a sidewalk 150 (FIG. 1) adjacent the outer edge 28 for accommodating pedestrian traffic throughout the structure 10.

The ramp 20 may further include a plurality of guest parking spaces 160 (FIGS. 1-3) and at least one elevator 170; preferably at the inner edge 22 thereof. The elevator 170 may be a passenger elevator 170, a vehicle elevator (not shown), or a freight elevator (not shown), or a mixture thereof, for example, at either end of the structure 10. At least one stairway 175 is included for pedestrian convenience and evacuation purposes in case of fire, for example (FIGS. 2 and 3).

The outer edge 28 includes a plurality of habitable units 30, each at one of a plurality of radial positions R_p with respect to a center 25 of the ramp 20. The habitable units 30 that share any particular radial position R_p but that are vertically offset are each generally vertically co-aligned in a common multi-level residential building...
Each habitable unit 30 comprises at least a particularly on the highest level 90. A habitable unit 30 is a two-story habitable unit 110 (FIG. 30 per level (FIG. 1). In one embodiment, at least one may include at least two laterally adjacent habitable units combined in a common multi-level residential building 40 (FIGS. 1, 2 and 7). Such stacks of habitable units 30 may be retail or office space, while the habitable units 30 on the lowest level 80 may further include security systems, landscaping, enclosures, devices and systems (not shown). A basement level 210 may further be included for storage, additional or oversized parking, or the like. The structure may include access control systems (not shown) at the lowest level 80, as well as fire safety enclosures, devices and systems (not shown). A base-

While the habitable units 30 are illustrated as being residential units, such habitable units 30 may also be hotel suites, medical offices, office or retail space, or the like. Likewise, the habitable units 30 on the lowest level 80 may be retail or office space, while the habitable units 30 on higher levels may be residential.

While a particular form of the invention has been illustrated and described, it will be apparent that various modifications can be made without departing from the scope of the invention, as defined by the appended claims. For example, substantially four levels are illustrated in the drawings, but a varying number of levels could be accommodated. Accordingly, it is not intended that the invention be limited, except as by the appended claims. Changes can be made to the invention in light of the above "Detailed Description." While the above description details certain embodiments of the invention and describes the best mode contemplated, no matter how detailed the above appears in text, the invention can be practiced in many ways. Therefore, implementation details may vary considerably while still being encompassed by the invention disclosed herein, as defined by the appended claims.

Claims

1. A housing structure (10) for erecting on a ground surface (15), comprising:

   a generally helical ramp (20) having an inner edge (22) and an outer edge (28), the outer edge including a plurality of habitable units (30) each at one of a plurality of radial positions with respect to a center (25) of the ramp (20), the habitable units (30) that share radial positions but that are vertically offset each being generally vertically co-aligned in a common multi-level residential building (40), the ramp at a lowest level (80) being coincident with the ground surface and at the highest level terminating in a loop (100), characterised in that each habitable unit (30) comprises at least garage (50) and a living space (60), the garage (50) connected to the ramp (20) with a driveway (70).

2. The housing structure (10) of claim 1 wherein each habitable unit (30) is a two-story habitable unit (110)

3. The housing structure (10) of claim 1 wherein the ramp (20) comprises a plurality of straight sections (120) each interconnected with curved sections (130).

4. The housing structure (10) of claim 1 wherein the ramp (20) is generally continuously sloped.

5. The housing structure (10) of claim 1 wherein at least one of the common multi-level residential buildings (40) includes at each level thereof at least two laterally adjacent habitable units (30).

6. The housing structure (10) of claim 1 wherein the ramp (20) includes two lanes (140) for accommodating vehicular traffic in opposing directions, and wherein the loop (100) at the highest level of the ramp connects the two lanes.

7. The housing structure (10) of claim 6 wherein the ramp further includes a sidewalk (150) adjacent the outer edge (28) for accommodating pedestrian traffic throughout the structure (10).

8. The housing structure (10) of claim 1 wherein the inner edge (22) further includes a plurality of guest parking spaces (160).

9. The housing structure (10) of claim 1 wherein the ramp arrangement further includes an elevator (170) at the inner edge (22) of the ramp (20).

10. The housing structure (10) of claim 1 wherein each habitable unit further includes a balcony (180) ori-
11. The housing structure (10) of claim 10 wherein each habitable unit further includes a breezeway (190) connecting each balcony (180) with the ramp between at least one laterally-adjacent habitable unit.

Patentansprüche

1. Wohnhausstruktur (10) zur Errichtung auf einer Bodenfläche (15), umfassend:

   eine allgemein spiralförmige Rampe (20) mit einer Innenkante (22) und einer Außenkante (28), wobei die Außenkante eine Vielzahl von Wohneinheiten (30) jeweils an einer von einer Vielzahl von radialen Positionen in Bezug auf eine Mitte (25) der Rampe (20) beinhaltet, wobei die Wohnungen (30), die zwar radiale Positionen teilen, aber vertikal versetzt sind, jeweils in einem gemeinsamen Mehretagenwohngebäude (40) vertikal aneinander ausgerichtet sind, wobei die Rampe auf der untersten Etage (80) mit der Bodenfläche zusammenfällt und auf der obersten Etage in einer Schlaufe (100) endet, dadurch gekennzeichnet, dass jede Wohneinheit (30) wenigstens eine Garage (50) und einen Wohnraum (60) umfasst, wobei die Garage (50) mittels einer Zufahrt (70) mit der Rampe (20) verbunden ist.

2. Wohnhausstruktur (10) nach Anspruch 1, wobei jede Wohneinheit (30) eine zweistöckige Wohneinheit (110) ist.

3. Wohnhausstruktur (10) nach Anspruch 1, wobei die Rampe (20) eine Vielzahl von geraden Abschnitten (120) umfasst, die jeweils durch gekrümmte Abschnitte (130) verbunden sind.

4. Wohnhausstruktur (10) nach Anspruch 1, wobei die Rampe (20) eine allgemein kontinuierliche Steigung aufweist.

5. Wohnhausstruktur (10) nach Anspruch 1, wobei wenigstens eins der gemeinsamen Mehretagenwohngebäude (40) auf jeder seiner Etagen wenigstens zwei laterals benachbarte Wohneinheiten (30) beinhaltet.

6. Wohnhausstruktur (10) nach Anspruch 1, wobei die Rampe (20) zwei Spuren (140) zum Aufnehmen von Fahrzeugverkehr in entgegengesetzten Richtungen beinhaltet und wobei die Schlaufe (100) auf der obersten Etage der Rampe die zwei Spuren verbindet.

7. Wohnhausstruktur (10) nach Anspruch 6, wobei die Rampe ferner einen Fußweg (150) benachbart zur Außenkante (28) beinhaltet, um Fußgängerverkehr in der Struktur (10) aufzunehmen.

8. Wohnhausstruktur (10) nach Anspruch 1, wobei die Innenkante (22) ferner eine Vielzahl von Besucherparkplätzen (160) beinhaltet.

9. Wohnhausstruktur (10) nach Anspruch 1, wobei die Rampenanordnung ferner einen Aufzug (170) an der Innenkante (22) der Rampe (20) beinhaltet.

10. Wohnhausstruktur (10) nach Anspruch 1, wobei jede Wohneinheit ferner einen Balkon (180) beinhaltet, der von der Rampe (20) weg gewandt ist.

11. Wohnhausstruktur (10) nach Anspruch 10, wobei jede Wohneinheit ferner einen Durchgang (190) beinhaltet, der jeden Balkon (180) mit der Rampe zwischen wenigstens einer lateral benachbarten Wohneinheit verbindet.

Revendications

1. Structure de logement (10) devant être construite sur une surface de sol (15), comprenant :

   une rampe généralement hélicoïdale (20) ayant un bord interne (22) et un bord externe (28), le bord externe comprenant une pluralité d’unités habitables (30) chacune au niveau d’une d’une pluralité de positions radiales par rapport à un centre (25) de la rampe (20), les unités habitables (30) qui partagent des positions radiales mais qui sont verticalement décalées chacune étant co-alignées généralement verticalement dans un immeuble résidentiel multiniveau commun (40), la rampe étant coincidente avec la surface du sol à un niveau le plus bas (80) et se terminant en une boucle (100) au niveau le plus élevé, caractérisée en ce que chaque unité habitable (30) comprend au moins un garage (50) et un espace d’habitation (60), le garage (50) étant raccordé à la rampe (20) par une voie d’accès (70).

2. Structure de logement (10) selon la revendication 1 dans laquelle chaque unité habitable (30) est une unité habitable à deux étages (110).

3. Structure de logement (10) selon la revendication 1 dans laquelle la rampe (20) comprend une pluralité de sections droites (120) chacune étant raccordée aux autres par des sections incurvées (130).

4. Structure de logement (10) selon la revendication 1
dans laquelle la rampe (20) est inclinée de manière généralement continue.

5. Structure de logement (10) selon la revendication 1 dans laquelle au moins l’un des immeubles résidentiels multiniveau communs (40) comprend à chacun de ses niveaux au moins deux unités habitables latéralement adjacentes (30).

6. Structure de logement (10) selon la revendication 1 dans laquelle la rampe (20) comprend deux voies (140) pour accueillir un trafic de véhicules dans des directions opposées, et dans laquelle la boucle (100) au niveau le plus élevé de la rampe raccorde les deux voies.

7. Structure de logement (10) selon la revendication 6 dans laquelle la rampe comprend en outre un trottoir (150) adjacent au bord externe (28) pour accueillir un trafic de piétons à travers la structure (10).

8. Structure de logement (10) selon la revendication 1 dans laquelle le bord interne (22) comprend en outre une pluralité d’espaces de stationnement pour visiteurs (160).

9. Structure de logement (10) selon la revendication 1 dans laquelle l’agencement de rampe comprend en outre un ascenseur (170) au niveau du bord interne (22) de la rampe (20).

10. Structure de logement (10) selon la revendication 1 dans laquelle chaque unité habitable comprend en outre un balcon (180) orienté à l’opposé de la rampe (20).

11. Structure de logement (10) selon la revendication 10 dans laquelle chaque unité habitable comprend en outre un passage couvert (190) raccordant chaque balcon (180) à la rampe entre au moins une unité habitable latéralement adjacente.
REFERENCES CITED IN THE DESCRIPTION

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